DETAILED ACTION

Response to Amendment

1.   This communication is in response to the Amendment filed on 14 July 2009.

2.   Claims 1 and 11-13 are currently pending. In the Amendment filed 14 July 2009,

claims 1 and 11 are amended and claims 2-10 and 14-17 are canceled. As a result of

the Amendment filed 14 July 2009 and the Examiner's Amendment presented below,

claims 1 and 11-13 (renumbered as 1-4) are allowed.

35 USC § 101 – Clarifications

3.   In light of the comments made on pages 6 and 7 of the Remarks filed 29 January

2009, at least the holding unit of the apparatus comprises at least one of hardware or a

combination of hardware and software. Therefore, the apparatus is considered to

include the hardware necessary to meet the requirements of 35 USC 101.

Examiner Amendment

4.   Authorization for this examiner's amendment, listed below, was given in a

telephone interview with Leonard Diana (Reg. No. 29,296) on 19 November 2009.

In the Claims:

Please amend claims 1 and 11 as follows:

1. (currently amended): An information processing method for setting an exclusive control right of a data item by a specific process in a system in which a plurality of processes that can communicate with each other via an information transmission medium share data including a plurality of data items by use of a data structure which has a hierarchy structure having a data item corresponding to an operational object as a root and describes a structural dependence of ~~the~~ a virtual space,

wherein each of the plurality of data items has type information indicating that the respective data item belongs to a first type in which an exclusive control right is set to the specific process for the data item and all data items belonging to a lower layer of the data item when no exclusive control right is set for the data item and all data items belonging to a lower layer of the item or a second type in which the exclusive control right is set to the specific process for data items for which no exclusive control right is set, of the designated data item and all data items belonging to a lower layer of the data item, and wherein, when the first type is indicated by the type information, an exclusive control right is set to the specific process for the data item and all data items belonging to a lower layer of the data item when no exclusive control right is set for the data item and all data items, and wherein, when the second type is indicated by the type information, the exclusive control right is set to the specific process for data items for which no exclusive control right is set, of the designated data item and all data items belonging to a lower layer of the data item, said method comprising:

a first designation step of designating a data item for which the exclusive control right is to be set;

a retrieval step of retrieving a data item which belongs to a lower layer of the data item designated in said first designation step on the basis of hierarchical structure information of the plurality of data items;

a determination step of determining whether or not an exclusive control right by another process is set, for each data item retrieved in said retrieval step;

a setting step of:

when the designated data item is indicated as the first type by the type information, setting the exclusive control right for the specific process as to the designated data item and as to a retrieved data item retrieved in said retrieval step only if no exclusive control right is set by other process for the designated data item and all of the retrieved data items, and not setting the exclusive control right for the specific process as to all of the designated data items and a retrieved data item in said retrieval step if the exclusive control right is set by another process for at least one of the designated data items and all of the retrieved data items; and

when the designated data item is indicated as the second type by the type information, setting the exclusive control right for the specific process as to the designated data item and as to the data items for which it is determined in said determination step that an exclusive control right by another process is not set;

a second designation step of designating a data item for which the exclusive control right is to be released; and

a first release step of releasing the exclusive control right of the specific process as to the data item designated in said second designation step and a data item which belongs to a lower layer of the data item designated in said second designation step, while maintaining the exclusive control right of the specific process as to a data item which belongs to an upper layer of the data item designated in said second designation step.

11. (currently amended): An information processing apparatus for setting an exclusive control right of a data item by a specific process in a system in which a plurality of processes that can communicate with each other via an information transmission medium share data including a plurality of data items by use of a data structure which has a hierarchy structure having a data item corresponding to an operational object as a root and describes a structural dependence of the a virtual space,

wherein each of the plurality of said data items has type information indicating that the data item belongs to a first type in which an exclusive control right is set to the specific process for the data item and all data items belonging to a lower layer of the data item when no exclusive control right is set for the data item and all data items belonging to a lower layer of the data item or a second type in which the exclusive control right is set to the specific process for data items for which no exclusive control right is set, of the designated data item and all data items belonging to a lower layer of the data item, and wherein, when the first type is indicated by the type information, an

exclusive control right is set to the specific process for the data item and all data items

belonging to a lower layer of the data item when no exclusive control right is set for the

data item and all data items belonging to a lower layer of the data item, and wherein,

when the second type is indicated by the type information, the exclusive control right is

set to the specific process for data items for which no exclusive control right is set, of

the designated data item and all data items belonging to a lower layer of the data item,

said apparatus comprising:

a holding unit for holding hierarchical structure information of the plurality of data

items;

a first designation unit for designating a data item for which the exclusive control

right is to be set;

a retrieval unit for retrieving a data item which belongs to a lower layer of the

data item designated by said first designation unit on the basis of hierarchical structure

information of the plurality of data items;

a determination unit for determining whether or not an exclusive control right by

another process is set, for each data item retrieved by said retrieval unit;

a setting unit for setting, when the first type is indicated by the type information,

the exclusive control right to the specific process for the data item and all data items

belonging to a lower layer of the data item when no exclusive control right is set for the

data item and all retrieved data items, and, not setting the exclusive control right for the

specific process as to all of the designated items and all of the retrieved data items if the

exclusive control right is set by another process for at least one of the designated data items and all of the retrieved data items; and

when the second type is indicated by the type information, setting the exclusive control right to the specific process for data items for which no exclusive control right is set, of the designated data item and all data items belonging to a lower layer of the data item;

a second designation unit for designating a data item for which the exclusive control right is to be released; and

a first release unit for releasing the exclusive control right of the specific process as to the data item designated by said second designation unit and a data item which belongs to a lower layer of the data item designated by said second designation unit, while maintaining the exclusive control right of the specific process as to a data item which belongs to an upper layer of the data item designated by said second designation unit.

Reasons for Allowance

5.   The argument has been fully considered and is persuasive.

An updated search for prior art on the EAST database and on domains (NPL-Google and ACM) has been conducted. The prior art searched and investigated in the database and domains does not fairly teach or suggest the teaching of the claimed subject matter as described above and reflected by the combined elements in independent claims 1 and 11. Dependent claims 12 and 13 are indicated as being allowable for the same reasons stated above in regards to the independent claims.

6.   The following is an examiner's statement of reasons for allowance:

After a thorough examination, the prior art of record does not teach the concept of assigning type information to each data item in the hierarchy, wherein the type information classifies the data item as either belonging to a first type or to a second type, wherein when the data item belongs to a first type, an exclusive control right is set to the specific process for the data item and all data items belonging to a lower layer of the data item and when the data item belongs to the second type the exclusive control right is set for the data item and any data item belonging to the lower layers of the data item that do not have an exclusive control right set.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIMBERLY LOVEL whose telephone number is (571)272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kimberly Lovel/
Examiner, Art Unit 2167   /Shahid Al Alam/
                                                     Primary Examiner, Art Unit 2162
November 19, 2009